electronic conductive element and an element conducting hydroxide ions, the element conducting hydroxide ions being a polymer having vinylaromatic units comprising a quaternary ammonium function and hydroxide counter-ions OH- being associated with the quaternary ammonium functions of the polymer." (Emphasis added). Landsman, Quinn and Herman fail to teach or suggest each and every feature of claim 11.

The Office Action, on page 2, asserts, "As is known in the art, a membrane must be present to separate the reactants from the alkaline solution." The Office Action uses this assertion as motivation to combine the membranes disclosed in Quinn and Herman with the fuel cell structure disclosed in Landsman. There are two fundamental flaws with this alleged motivation. First, the claimed fuel cell does not require an alkaline solution, and second, the membrane and the active layer on the electrodes are two distinct elements of the claimed invention. Therefore, a membrane need not be present to "separate the reactants from the alkaline solution," and even if such a membrane were added to the claimed fuel cell, it would not change the composition of the active layers on the electrodes.

Keeping the above in mind, Landsman merely teaches an alkaline fuel cell comprising an anode, a cathode, and an alkaline electrolyte held within a porous non-conducting matrix positioned between the anode and the cathode. See Landsman, col. 2, lines 61-64 and col. 3, lines 1-3. Thus, the fuel cell disclosed by Landsman coincides with an alkali fuel cell with electrolyte exchanging hydroxide ions in liquid form. However, the membrane of the claimed invention is a solid membrane that does not require electrolyte exchanging hydroxide ions in liquid form. See instant specification, page 11, lines 24-28.

Further, the electrodes of Landsman comprise a porous substrate and a catalyst layer supported on the substrate. The catalyst layer contacts the porous non-conducting matrix and include a hydrophobic binder, catalyst particles and hydrophilic particles. See Landsman, col. 3, lines 16-19. However, the material forming the catalyst layers does not contain an element

for conducting hydroxide ions, and most certainly does not teach or suggest the use of the specific elements for conducting hydroxide ions as recited in claim 11.

Herman discloses a polymer that can be used as a solid membrane. However, nowhere does Herman discuss the composition of an anode or cathode active layers. As stated above, the membrane disclosed by Herman must not be confused with the active layers of the electrodes as recited in claim 11; they are two separate elements in the claimed invention. Therefore, even if one of ordinary skill in the art would have combined the teachings of Herman and Landsman, the combination would have yielded the fuel cell structure of Landsman, as discussed above, with the alkaline electrolyte replaced by the solid membrane as disclosed in Herman. There is no motivation in either Herman or Landsman to modify the active layers on the anode and cathode of Landsman, and Applicants respectfully assert that any such combination applies impermissible hindsight.

Further, one of ordinary skill in the art would not have been motivated to combine the teachings of Quinn with the teachings of either Herman or Landsman. Quinn does not concern the field of alkali fuel cells, and it is not in the field of active layers for electrodes. Quinn is directed to a membrane for the separation of acid gasses. Quinn teaches a membrane that separates, by selective permeation, carbon dioxide and hydrogen sulfide from methane and hydrogen. Thus, the membrane taught in Quinn allows carbon dioxide and hydrogen sulfide to pass through the membrane while the membrane does not transport hydrogen and methane. Therefore, Quinn does not teach or suggest the benefit of a membrane that conducts hydroxide ions or the conductive element of an electrode for conducting hydroxide ions as recited in claim 11.

For at least the reasons stated above, claim 11 would not have been rendered obvious by Landsman, Quinn or Herman, individually or in combination. Claims 12, 13 and 15-20 depend from claim 11 and, thus, also would not have been rendered obvious by Landsman,

Quinn and Herman. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

B. Landsman, Quinn, Herman and Yokoyama

The Office Action rejects claim 14 under 35 U.S.C. §103(a) as obvious over Landsman, Quinn, Herman and U.S. Patent No. 4,374,924 to Yokoyama et al. ("Yokoyama"). Applicants respectfully traverse the rejection.

For at least the reasons stated above, Claim 11 would not have been rendered obvious by Landsman, Quinn and Herman. Further, Yokoyama is not applied to address the discrepancies of Landsman, Quinn and Herman as to claim 11. Therefore, Landsman, Quinn, Herman and Yokoyama fail to teach or suggest each and every feature of claim 11.

Claim 11 would not have been rendered obvious by Landsman, Quinn, Herman or Yokoyama, individually or in combination. Claim 14 depends from claim 11 and, thus, also would not have been rendered obvious by Landsman, Quinn, Herman or Yokoyama. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

William P. Berridge
Registration No. 30,024

Nicolas A. Brentlinger
Registration No. 62,211

WPB:NAB/kjl

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OLIFF & BERRIDGE, PLC
P.O. Box 320850
Alexandria, Virginia 22320-4850
Telephone: (703) 836-6400

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